

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 02-096606

(43)Date of publication of application : 09.04.1990

(51)Int.Cl.

G01B 15/00  
H01J 37/22  
H01J 37/244  
H01J 37/28

(21)Application number : 63-247492

(71)Applicant : CANON INC

(22)Date of filing : 03.10.1988

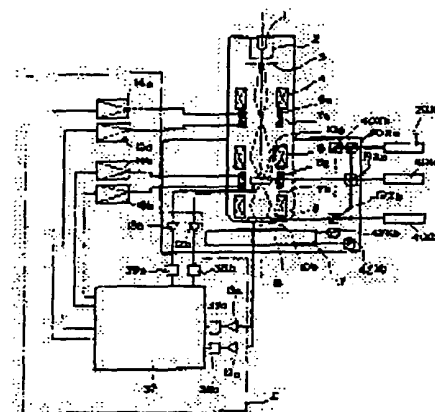
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## (54) MINUTE-SIZE MEASURING APPARATUS

## (57)Abstract:

**PURPOSE:** To obtain a measuring apparatus wherein the measuring errors of minute sizes due to temperature change in an environment and mechanical vibration by detecting the position of an electron beam in a plane perpendicular to an optical axis, and moving the electron beam from said position to a specified position.

**CONSTITUTION:** An electron beam mirror tube has a reference point and has electron-beam position detectors 10a and 10b which detect the position of the electron beam and electron-beam-position correcting deflection coils 6a, 7a, 6b and 7b. A length measuring device having beam splitters 19Xa and 19Xb is optically connected to the reference points of the electron-beam-position detectors 10a and 10b and the reference point of a specimen stage 17. The relative positions of the electron-beam position detectors 10a and 10b and the specimen stage 17 are determined. A central processing unit 37 is connected to the electron-beam position detectors 10a and 10b and the electron-beam-position correcting deflection coils 6a, 7a, 6b and 7b. The amount of deviation required for moving the electron beam to a specified position in a plane that is perpendicular to the optical axis of the electron beam is determined based on the detected signals of the electron-beam position detectors 10a and 10b. Deflecting signals for moving the electron beam to the specified position are imparted to the electron-beam position correcting deflection coils 6a, 7a, 6b and 7b.





(19)

(11) Publication number:

**02096606 A**

Generated Document.

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(30) Priority:	(71) Applicant: <b>CANON INC</b>
(43) Date of application publication: <b>09.04.90</b>	(72) Inventor: <b>KORENAGA NOBUSHIGE UZAWA SHUNICHI GOTO SUSUMU KARIYA TAKUO</b>
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**(54) MINUTE-SIZE  
MEASURING APPARATUS**

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